

**WHAT IS CLAIMED IS:**

- 1 1. A method comprising:
  - 2 receiving, from an application process, a document specifying a communication
  - 3 protocol and a communication channel;
  - 4 reading the document;
  - 5 instantiating the communications channel with the application process using the
  - 6 communication protocol;
  - 7 sending communications to the application process using the communication
  - 8 protocol through the communication channel; and
  - 9 receiving communications from the application process using the communication
  - 10 protocol through the communication channel.
- 1 2. The method of claim 1 further comprising:
  - 2 sending a request for data describing the application process and its requirements;
  - 3 and
  - 4 receiving data describing the application process and its requirements.
- 1 3. The method of claim 2 wherein the data comprises process identification or degree of
- 2 consumption of a resource by the application process.
- 3 4. The method of claim 3 wherein the data further comprises a definition of the resource.
- 1 5. The method of claim 3 wherein the resource comprises one or more of a central
- 2 processing unit, memory, socket bindings, memory storage space, and communication
- 3 bandwidth.
- 1 6. The method of claim 1 wherein sending communications comprises sending a
- 2 command to the application process to perform an action.
- 1 7. The method of claim 6 wherein the action is one of start, stop, wait, resume, and
- 2 change priority.
- 1 8. The method of claim 1 wherein the document further specifies one or more commands
- 2 that the application process is capable of receiving and executing.

1 9. A system comprising:

2 a computer system with a processor and a memory;

3 a service handling at least locating, reserving, allocating, monitoring, and  
4 deallocating one or more computational resources on the computer system for an  
5 application program, the service configured to read a document specifying how to  
6 interface with the application program; and

7 the application program configured to execute on the computer system as an  
8 application process managed by the service.

9 10. The system of claim 9 wherein the service is further configured to instantiate a  
10 communications channel with the application program

1 11. The system of claim 9 wherein interfacing with the application program comprises  
2 sending a request for data describing the application process and receiving data  
3 describing the application process.

1 12. The system of claim 11 wherein the data comprises process identification or degree of  
2 consumption of a resource by the application process.

3 13. The method of claim 12 wherein the data further comprises a definition of the  
4 resource.

1 14. The system of claim 12 wherein the resource comprises one or more of the processor,  
2 the memory, socket bindings, memory storage space, and communication bandwidth.

1 15. The system of claim 9 wherein to interface comprises sending a command to the  
2 application process to perform an action.

1 16. The system of claim 15 wherein the action is one of start, stop, wait, resume, and  
2 change priority.

1 17. The system of claim 9 wherein the document further specifies one or more commands  
2 that the application process is capable of receiving.

- 1 18. The system of claim 9 further comprising a second application program configured to
- 2 execute on the computer system as a process managed by the grid manager, wherein the
- 3 service is configured to read a second document specifying how to interface with the second
- 4 application program.